

PRODUCTION OF FLUORINE-BASED POROUS HOLLOW YARN MEMBRANE

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Inventor: KAMINE YASUHIRO; KIKUYA NOBUYUKI; HIRAI TAKAYUKI; KAMO JUN

Applicant: MITSUBISHI RAYON CO

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Abstract of JP4187224

PURPOSE: To obtain a porous hollow yarn high in mechanical strength and having a thick film by melt-spinning an ethylene-chlorotrifluoroethylene copolymer and stretching the obtained yarn to make it porous. CONSTITUTION: An ethylene-chlorotrifluoroethylene copolymer is melt-spun with a hollow yarn producing nozzle to obtain an unstretched crystalline hollow yarn which is highly oriented. The spinning temp. has to be controlled to 240-280 deg.C, and the yarn fiber is wound at 100-4000 yarn forming draft. Since the crystallinity of the unstretched hollow yarn obtained is not sufficiently yet, it is heat-treated (annealed) at 180-240 deg.C preferably in an inert gas atmosphere. The crystal structure is then not relaxed but broken and cold-stretching at <70 deg.C by 10-100%. The cold-stretched yarn hot-stretching at 70-160 deg.C. The total stretching rate is controlled in this case to 30-400% after hot stretching.

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